

REMARKS

Claims 1-15 are in this application and are presented for consideration. By this Amendment, Applicant has amended claims 1, 3, 4, 5, 6, 8 , 10, 11, 12 and 13. Applicant has also canceled claims 2 and 9. Applicant has added new claim 15.

Claims 1-14 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Applicant has revised the claims so that the claims are clear and particularly point out the subject matter which Applicant regards as the invention. Claim 1 is supported on page 2, lines 16 to page 3, line 1 of the specification. The features of claims 2-14 are found in the Summary of the Invention and Brief Description of the Drawings sections of the specification. Accordingly, Applicant respectfully requests that the Examiner favorably consider the claims as now presented.

Claims 1, 2, 8 and 9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshii (US 5,681,076) and further in view of Verbofsky (US 5,349,801).

The present invention relates to a roof module for a motor vehicle body. The roof module comprises a reinforcing frame and a roof panel. The roof panel is fastened to the reinforcing frame. The reinforcing frame or the roof panel has a folded flange at an edge of a U section. An edge strip of the roof panel or reinforcing frame engages into the U section. The edge strip of the roof panel or reinforcing frame is bonded to the reinforcing frame or roof panel. A joint is defined by the folded flange of the reinforcing frame or the roof panel and by

the roof panel or the reinforcing frame. The joint is advantageously sealed by a sealing piece to prevent corrosion and to prevent dirt from entering the joint. The reinforcing frame is fastened to the motor vehicle body by means of a screw connection located at a screw location and by bond pads located at a bond location, whereby a prefabricated and painted roof module is placed on the bonding location and is connected to the vehicle body by said screw connection from inside the motor vehicle. The roof panel covers an area that is greater than a roof opening in the motor vehicle body. This advantageously allows the roof module to be placed on during the final stages of assembly after the interior has been outfitted through the large roof opening. The present invention advantageously provides a secure connection while providing a design that allows for the roof module to be easily and simply attached to an opening in a motor vehicle body.

Yoshii discloses a sunroof 2 of a vehicle body 1 having a roof panel 2A. Roof reinforcement members 3 extend transversely across in the direction of the vehicle width on the underside of the roof panel 2A and roof side rails 4 each of which extend in the lengthwise direction from the front to the back of the vehicle body along each side of the roof 2, and is connected to the tops of pillars 10, 11, 12 and 13. The roof side rail 4 is formed into a close cross-section by connecting a generally U-shaped roof side rail inner panel 41 and a roof side rail outer panel 42 to each other. The roof side rail outer panel 42 is endowed with a horizontal surface 420 which is formed as a top surface extending horizontally along the top of the roof side rail outer panel 42, and a vertical surface 430 which is formed as an outer side surface of a joint flange 43 to which the roof side rail inner panel 41 is secured. A U-shaped bracket 5 is

formed by a bottom wall section 50, a pair of side wall sections 54 extending upwardly from both sides of the bottom wall section 50, and a flange 55 extending laterally outside along the top edge of each of the side wall sections 54. The bottom wall section 50 is endowed with a first horizontal wall section 51 on one side thereof, an inclining wall section 52 extending upwardly from the first horizontal wall section 51, and a second horizontal wall section 53 extending horizontally from the inclining wall section 52 on another side of the bottom wall section 50 opposite to the side where the first horizontal wall section 51 is provided. The bottom wall section 50 is provided with a positioning nut 56 securely attached to the second horizontal wall section 53. The bottom surface of the first horizontal surface wall section 51 of the bottom wall section 50 is welded to the horizontal surface 420 of the roof side rail 4 and the bottom surface of the inclining wall section 52 is welded to the vertical surface 430 of the roof side rail 4. At each end, the roof reinforcement member 3 is placed on and secured to one end of an attachment bracket 5 which in turn is secured to the roof side rail 4 at another end through the first horizontal wall section 51 and the inclining wall section 52.

Yoshii fails to teach or suggest the features of the roof module as recited in claims 1 and 8. Yoshii fails to provide a prefabricated roof module. In fact, Yoshii teaches away from the present invention. Yoshii suggests that the bottom surface of the first horizontal surface wall section 51 of the bottom wall section 50 is welded to the horizontal surface 420 of the roof side rail 4 and the bottom surface of the inclining wall section 52 is welded to the vertical surface 430 of the roof side rail 4. In contrast to the present invention, the connection disclosed in Yoshii is more complex and is not as easy to connect the roof module of the present invention

to a vehicle. In the present invention, the prefabricated roof module advantageously provides an easier connection than Yoshii since the roof panel and the reinforcing frame of the present invention are already bonded together before the roof module is placed on the opening of the vehicle. This advantageously saves in manufacturing costs because the roof module of the present invention can then simply be attached by a screw connection from inside the motor vehicle. The fact that the edge strip in the present invention is bonded to the reinforcing frame or roof panel advantageously provides for a simpler connection that does not require welding as required in the connection of the roof panel 2a to the U-shaped bracket of Yoshii. Yoshii fails to suggest a reinforcing frame fastened to the motor vehicle body by means of a screw connection located at a screw location and by bond pads located at a bonding location. This advantageously provides a prefabricated roof module to be placed on the bonding location of the present invention. The prefabricated roof module can then easily be connected to the vehicle body by a screw connection from inside the motor vehicle. Yoshii fails to teach such a connection.

Yoshii fails to teach or suggest the combination of sealing material in contact with a folded flange and a second surface to form a sealing joint between the folded flange and an edge strip. In the present invention, the sealing joint is sealed by the sealing material. This is significant because the seal advantageously prevents corrosion of the external joint while preventing dirt and other contaminants from entering the joint. Yoshii fails to provide such an advantage. As such, the prior art teaches a different approach and does not suggest the features of the present invention.

Verbofsky discloses a sheet metal shingle 10 which comprises a rectangular panel made from aluminum alloy. The shingle 10 is adapted to be applied to a roof in a horizontal fashion across the roof so that the major axis of the shingle extends horizontally on the roof. The shingle 10 has a plurality of recessed channels formed therein which extend transversely of the major axis of the shingle so the channels are aligned with the slope of the roof. Shingle 10 has an outer surface 14 exposed upwardly and outwardly when the single is applied to a roof structure and an inner surface 16 which is disposed against the roof underlayment when the shingle is applied to a roof structure. The shingle 10 has a male edge 18 which is installed as the top edge of the shingle and a female portion 20 which is adjacent the lower edge 25 of the shingle. A nailing flange 22 is disposed along the lower edge 25 of the shingle below the female portion 20. The male edge 18 includes a doubled over return bend portion 24 to strengthen the shingle and shield the cut upper edge 27 of the panel from which the shingle is formed. The female portion 20 is in the form of an S-bend in the panel. The S-bend includes a downwardly open channel 26 for receiving the male portion 18 of the adjacent shingle. The channel 26 extends the full length of the shingle 10 and is sized to receive the male portion 18. Shingle 10 has a bead of resilient compressible material 32 disposed on either the male edge 18 or in the channel 26 along the full length of the shingle. The resilient material 32 is compressed by the interior surface of the channel 26 when the male edge 18 is inserted into the channel 26 of the adjacent shingle.

Verbofsky fails to teach or provide motivation for the features of the roof module as recited in claims 1 and 8. Verbofsky fails to provide a prefabricated roof module. In fact,

Verbofsky teaches away from the present invention since the shingle disclosed in Verbofsky is used in a different environment than that of the present invention. Verbofsky fails to disclose a prefabricated roof module that can be attached to a roof opening in a motor vehicle. Verbofsky discloses that the shingle is applied to a roof in a horizontal fashion across the roof so that the major axis of the shingle extends horizontally on the roof. Verbofsky fails to provide any motivation for using such a shingle in the production of vehicles. In the present invention, the prefabricated roof module advantageously provides an easy connection than since the roof panel and the reinforcing frame of the present invention are already bonded together before the roof module is placed on the opening of the vehicle. This advantageously saves in manufacturing costs because the roof module of the present invention can simply be attached by a screw connection from inside the motor vehicle. Verbofsky fails to suggest a reinforcing frame fastened to the motor vehicle body by means of a screw connection located at a screw location and by bond pads located at a bonding location. This advantageously allows a prefabricated roof module to be placed on the bonding location of the present invention. The prefabricated roof module can then easily be connected to the vehicle body by a screw connection from inside the motor vehicle. Verbofsky fails to teach such a connection for use in a motor vehicle.

Verbofsky fails to teach or provide motivation for the combination of sealing material in contact with a folded flange and a second surface to form a sealing joint between the folded flange and an edge strip. In the present invention, the joint is advantageously sealed by sealing material to prevent contaminants from entering the joint. Verbofsky merely suggests a shingle

10 that has a bead of resilient compressible material 32 disposed on either a male edge 32 disposed on either a male edge 18 or in a channel 26 along the full length of the shingle. Verbofsky fails to provide any motivation for attaching the shingle to a reinforcing frame or roof panel of a motor vehicle. Verbofsky fails to disclose a sealing joint between the folded flange and the edge strip that is sealed. Applicant fails to see how the shingle disclosed in Verbofsky could be attached on the bonding location of the present invention and connect to the vehicle body by screw connections from inside the vehicle. Verbofsky fails to suggest connecting the shingle to a roof of a motor vehicle. As such, the prior art suggests a different approach and fails to provide the features of the present invention. Accordingly, Applicant respectfully requests that the Examiner favorably consider claims 1 and 8 and all claims that depend respectively thereon.

Applicant has added new independent claim 15. New independent claim 15 provides similar features as disclosed in claim 8, but provides for the combination of the roof module and the vehicle body. Screws and adhesive are provided to connect the roof module to the vehicle body. The prior art as a whole fails to provide such a connection. New independent claim 15 provides similar advantages as already discussed in regards to claims 1 and 8. Applicant respectfully requests that the Examiner favorably consider new independent claim 15.

The prior art as a whole fails to direct the person of ordinary skill in the art toward the feature of the invention. Further, the invention includes cooperating features which provide particular advantages which are neither taught nor suggested by the prior art. Accordingly, Applicant requests that the Examiner favorably consider the amended claims in light of the

discussion above.

Further and favorable consideration on the merits is requested.

Respectfully submitted  
for Applicant,



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